UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION III
1650 Arch Street
Philadelphia, Pennsylvania 19103-2029

DATE : 7-20-16

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SUBJ: Inspection Report of United States Steel Clairton Works

FROM: James Hagedorn, Environmental Scientist, EPA Region III
Natalia Vazquez, Environmental Engineer, EPA Region III
Erin Malone, Physical Scientist, EPA Region III

VIA: Zelma Maldonado, Associate Director, Office of Air Enforcement and Compliance Assistance
and
File Room

Mailing Address

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EPA Enforcement Personnel

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Angela Crowley, Coke Oven Inspector, (412) 578-8103

United States Steel Personnel

Mike Dzurinko, Environmental Manager, Mon Valley Works, 412-233-1467
Jonnell Sheetz, Clairton Works Environmental Manager, 412-233-1015

Michael Rhoads, Plant Manager, 412-233-1002
Dave Hacker, USS Law Department, 412-433-2919
Brett Tunno, USS Headquarters, Environmental Affairs, 412-433-5767
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Terry Redenbaugh, Veolia Water (Contractor to USS), 412-913-0178
Frank Kozleuchar, USS, Raw Materials Manager, 412-433-3824

Date of Inspection: June 28th and 29th 2016 EPA arrived on site at about 9:00 am.

Overview: EPA scheduled this inspection of United States Steel (USS) Clairton Works (Company or Facility) as part of its routine program for facility compliance evaluation in Region III due to emission requirements issues and discussions with other interested parties. EPA requested documentation on the monitoring and recordkeeping requirements of the applicable regulations and USS's normal programs for meeting the regulations. EPA sent an email to USS on June 14, 2016, included as Attachment 1 to this report, to notify the Company of the inspection and to request that certain information be available during the inspection.

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Opening Conference:

Shortly after arrival, EPA was escorted to a conference room in the main office of the Clairton plant for a detailed discussion of the inspection and agenda. The EPA inspectors identified ourselves to the plant personnel and presented our EPA credentials and identification. Jim told the USS personnel that EPA was on-site to perform a routine inspection of the plant emissions sources and Clean Air Act permit compliance status. ~~Natalia and Erin~~Ms. Vazquez and Ms. Malone participated in the inspection to observe the coke-making process and inspection techniques specific to coke plants. Angela Crowley, of Allegheny County Health Department (ACHD), showed ~~Natalia and Erin~~Ms. Vazquez and Ms. Malone how she performs her daily inspections of Clairton Coke Works.

~~Jim~~ I explained that EPA Region III oversees the air programs in 5 states (Pennsylvania, Maryland, Virginia, Delaware, and West Virginia) as well as the District of Columbia. ~~Jim~~ I indicated that EPA wanted to initially discuss the Facility operations and then to physically examine the facilities and other air emission points. ~~Jim~~ I further indicated that EPA ~~wanted~~ would like to take some photographs of the Facility and that ~~we~~ EPA would supply USS with a copy of the photos for review. If USS believed that any of the photos contained Confidential Business Information (CBI), EPA would mark them "CBI" and treat them as such. ~~Jim~~ I also indicated that EPA would ~~be writing~~prepare an inspection report and that if any parts of the discussion were to be

considered CBI, please let EPA know so the report could reflect that. ~~Jim~~ I noted that EPA would send a copy of the inspection report to USS within about 6 weeks.

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Inspection Highlights:

During this inspection, EPA reviewed with the USS personnel some of the information requested in the June 14th 2016 email and the company provided some hard copy information for EPA review. The information submitted will be reviewed in detail shortly. ~~Some of that information was taken by EPA during the inspection.~~ Any written responses and documentation provided by this company will be filed in EPA's file room under United States Steel Clairton Works at the conclusion of EPA's investigation. The company's oral responses are noted in this report.

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~~The USS personnel were very helpful and cooperative during this facility inspection.~~ The information on Clairton Works, as noted in the following paragraphs and in general in this report, was provided to EPA by personnel from USS during the time period of June 28th and 29th 2016 as follows:

1. At the opening conference, all the attendees provided their titles and current position.
2. EPA received general information on the facility, USS's economic condition and the current operating situation.
~~2.~~3. Battery coking times and battery maintenance information was provided. At the time of the inspection, USS representatives stated that Clairton was operating coke oven batteries 13, 14, 15, 19, and 20 at 36-hour coking time from the time the coal is charged into the ovens. Batteries 1, 2 and 3 were operating on 21.75-hour coke and the large B and C batteries were on 24-hour coke. Clairton Works was previously producing 12,300 tons of coke per day but at the time of the inspection were down to 8,500 tons of coke per day.
~~3.~~4. EPA inspectors looked at the compliance status for coke battery doors, topsides, charging, pushing, and combustion stacks to the extent possible with the limited number of available EPA personnel over this two day period. ~~New~~ EPA representatives were able to observe the coking operation, the equipment utilized, the inspection procedures and the emission sources involved in the coke making process. Additional inspections may be required to fully evaluate the current compliance status with all applicable regulations. EPA was ~~told~~ informed that the oven temperature was around 2500 degrees Fahrenheit at the time of the inspection. The pushing emission control system installed at the four meter batteries is a hood and baghouse configuration where the pushing emissions are controlled to some degree but the travel emissions generated during the trip to the

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quench tower are not controlled.

4.5. USS representatives stated that the blast furnaces at Gary Works in Gary, Indiana used to be supplied with coke by Clairton Works but the Gary plant is no longer being used very much.

6. The coking process at the Clairton plant produces light oil, tar, coke and elemental sulfur which are all saleable products. USS representatives stated that Koppers Company has been handling the tar generated at Clairton but USS now has to go with a different tar company which has yet to be determined.

5.7. USS used to have a chemical facility on Neville Island in the Ohio River but this plant is no longer affiliated with USS.

6.8. Dave Hacker stated that USS is dealing with certain trade issues now due to the influx of imported steel and monetary losses by the Company. For example, the Granite City, Fairfield and Gary plants have all taken cuts in production. Two blast furnaces are shutdown at Granite City, the Fairfield plant has been permanently idled and Gary Works has also been shutdown. USS Clairton Works is the only coke plant operating for USS at the present time.

7.9. Number 15 coke battery was put on hot idle status for 4-5 years, meaning they kept the refractory hot but did not produce any coke in the ovens. From 2007 through 2016, USS did throughwall repairs on all the ovens at "B" battery. USS representatives stated that the cost of a throughwall repair is one million to one and a half million dollars per oven. Uhde Corporation did resolve the excess charging emissions at the new "C" coke battery. Veolia Company does the Method 303 inspections at Clairton Works on a daily basis. USS representatives stated that layoffs had recently occurred at Clairton Works due to the slowdown in the steel industry. Drilling for natural gas did provide a need for steel but that activity is winding down.

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8.10. A coal blend, consisting of both low volatility coal and high volatility coal is used in order to control the pressure on the oven walls. The pressure within the coke ovens must be regulated to ensure that the oven refractory does not deteriorate.

9.11. Mike Dzurinko stated that his group in the Environmental Department at Mon Valley Works went from seven employees down to five. Mike estimated that the plant is down by 25% on employment from where it used to be.

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10.12. USS representatives stated that they had last met with PennFuture environmental group back in 2014 over concerns about the emissions from Clairton Works.

11.13. All coal blending is done down at the river where the coal comes in by barge. USS is currently using two barge unloaders.

12.14. The Company installed low emission quench towers in the Clairton plant covering the 19 and 20 battery unit and the 13-15 coke battery unit at a cost of 50

million dollars each. These new towers have a double set of baffles to capture particulate emissions from the quenching operation. These baffles are sprayed off with water every other push.

~~13.~~15. The Company said that 5.8 million tons of coal equates to 4.3 million tons of coke due to the vaporization of volatiles from the coal into the coke oven gas (COG). USS said that more COG goes to Irvin Works than to Edgar Thomson Works due to the reheaters for heating up the steel prior to rolling the steel out to product specs.

~~14.~~16. EPA spoke with the coal handlers at Clairton Works regarding the coal preparation and coal blending procedures. Frank Kozleuchar of USS talked about the general coal handling procedure at Clairton and the coal blend Clairton uses for oven maintenance. Frank said that Clairton uses a blend of low volatility coal, high volatility coal, mid volatility coal, standard B high volatility coal and premium A high volatility coal to meet ovens needs at the time of coking. Frank handles 20 some branded coals from 6-10 different coal suppliers including mines from both West Virginia and Virginia mining sites. Frank stated that he pays careful attention to the following coal parameters: moisture, ash, sulfur content, and volatile matter. Frank said that Powder River Basin coal can run 8-10 dollars per ton but Clairton normally gets coal at 50-80 dollars per ton on an ongoing basis. The coal moisture runs the range of 6.5 to 8.5% moisture when they charge it into the ovens. Coal usage at Clairton is around 6 million tons per year charged to the coke ovens.

The results of the emission source inspections are as follows:

Emission Source	**Date**	**Allowable**	**Actual**	**Inspector**
#1 Battery Pushing	6-28-16	<20% Opacity	5% opacity A15-1 Battery	Jim Hagedorn
#3 Battery Doors	6-28-16	10% Leaking Doors	0% Doors Leaking	Jim Hagedorn
#2 Battery Doors	6-28-16	10% Leaking Doors	0% Doors Leaking	Jim Hagedorn
#1 Battery Doors	6-28-16	10% Leaks	0% Leaks	Jim Hagedorn
#19-20 Pushing	6-28-16	<20% Opacity	5%-10% Opacity	Jim Hagedorn
20 Battery Doors	6-28-16	10% Leaking	0% Leaks	Jim Hagedorn

"B" Battery Topside	6-29-16	4% Leaking	0% Leaks	Jim Hagedorn
"B" Battery Charging	6-29-16	55 sec./5 charges	9 sec./5 chgs	Jim Hagedorn
19 Battery Doors	6-28-16	10% Leaks	0% Leaks	Jim Hagedorn
#3 Stack	6-28-16	3 min. >= 20%	0 min. >= 20%	Erin Malone
#1 Stack	6-28-16	3 min >=20%	0 min >= 20%	Natalia Vazquez

At the conclusion of Wednesday's activities, EPA thanked the facility personnel for their assistance and stated that an inspection report would be issued to USS Clairton Works. EPA left the facility around 3:30 PM ~~for the drive back to the hotel~~.

Information Received From USS:

1. Mon Valley Works General Information Handout
2. C Battery Permit Application Information
3. Askania House battery backpressure charts
4. Opening Meeting Sign In Sheet
5. Gore SO2 Control System (CBI)
6. Oven Pushing Operating Procedure (CBI)
7. Battery Oven Door Cycle Document (CBI)
8. Oven Charging/Topside Emissions Document (CBI)
9. MACT Pushing Work Practice Procedure (CBI)
10. Battery Draft Stacks Document (CBI)
11. Dry Gumming Document (CBI)
12. Fugitive Dust Control Document
13. Startup, Shutdown, Malfunction Plan
14. End Flue Repair Batteries 13, 14, and 15 Document
15. Regenerator Repair Batteries 13, 14, and 15 Document
16. Baghouse Operation Document
17. Road Dust Control Document
18. NO_x Compliance Document
19. Coke By-Product NESHAP Requirements Document

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Was this inspection just for opacity? Are there other requirements in the permit or MACT/NSPS requirements that were reviewed?

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Photo Log

Photo	Description
1	Pusher Side Coke Oven Doors
2	New Quench Tower at Clairton
3	Hot Car With Emission Control System
4	Pushing Control Baghouses and Piping
5	Hot Coke Pushed Into Hot Car
6	Another New Quench Tower
7	Coke Oven Doors
8	Topside of Coke Ovens and Larry Car
9	Topside of Coke Ovens Showing Offtake Pipes and Lids
10	"B" Battery Topside Showing Shed and Offtake Pipes
11	Another Shot of "B" Battery Topside With Lidman Working
12	Shipping Coke Out of Plant By Rail
13	Picture of Clairton From Main Road